Visualizing Survey Data with Tableau
Activity Guide

A demo of what we will make can be found here:
https://public.tableau.com/views/SurveyDataExample/Vote?:embed=y&:display_count=yes

Download the data set: SurveySampleData_July2014C.xlsx

Open Tableau

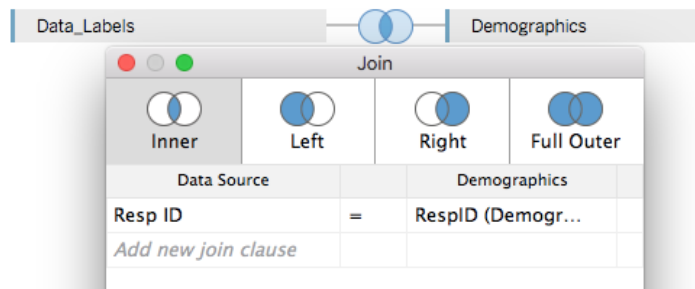Connect to Excel File > SurveySampleData_July2014C.xlsx

Extract 1
Drag the **Data_Labels** sheet to the "Drag Sheets Here" section of the interface

Drag the **Demographics** sheet to the same section

Select the Venn diagram symbol between the two sheets

Select Left Join on RespID

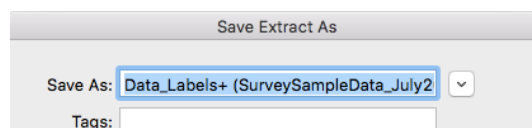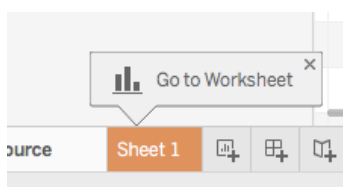Click to highlight Columns Q0 through Q134e (hold down Shift key to highlight multiple columns at once)

Right click anywhere in the grey area and select "Pivot" from the dropdown menu. This will restructure your data so that the responses to non-demographic questions are in 2 columns.

Rename "Pivot Field Names" to "QuestionID" and "Pivot Field Values" to "Text Response"

Select Extract in the top right corner of the interface

Click the Sheet 1 tab and save the extract

Extract 2

Select "New Data Source" from the "Data" dropdown menu in the toolbar

Connect to the same Excel File > SurveySampleData_July2014C.xlsx

Drag the **Data_Numbers** sheet to the "Drag Sheets Here" section of the interface

Click to highlight Columns Q0 through Q134e (hold down Shift key to highlight multiple columns at once)

Right click anywhere in the grey area and select "Pivot" from the dropdown menu.

Rename the "Pivot Field Names" column to "QuestionID" and "Pivot Field Values" to "Number Response"

Select Extract in the top right corner of the interface

Connection
○ Live   ⦿ Extract

Click the Sheet 1 tab and save the extract

Extract 3

Select "New Data Source" from the "Data" dropdown menu in the toolbar

Connect to Excel File > SurveySampleData_July2014C.xlsx

Drag the **Question Helper** sheet to the "Drag Sheets Here" section of the interface

Select Extract in the top right corner of the interface

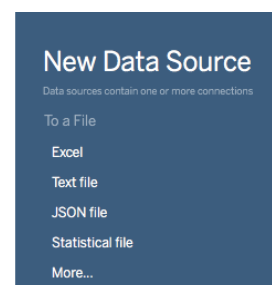Click the Sheet 1 tab and save the extract

Join Extracted Data

Select "New Data Source" from the "Data" dropdown menu in the toolbar

Select "More…" from the new data source dropdown menu

Connect to file >
Data_Labels+Demog(SurveySampleData_July2014C).tde

New Data Source

Data sources contain one or more connections

To a File

Excel

Text file

JSON file

Statistical file

More...

Connections   Add
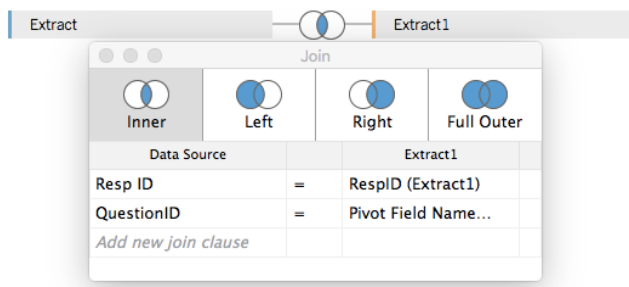
Data_Labels+D...ta_July2014C)
Tableau Data Extract

Select Add
Connect to file > Data_Numbers(SurveySampleData_July2014C).tde

Select the Venn diagram symbol between the two sources.
Join the sources: RespID = RespID (Extract 1)
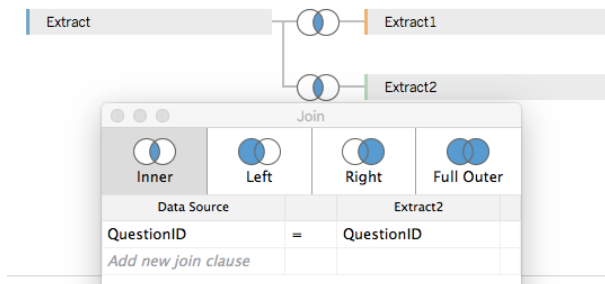QuestionID = Pivot Field Names (Extract 1)

Add another source
Select "More…" from the new data source dropdown menu
Connect to file > Question Helper(SurveySampleData_July2014C).tde

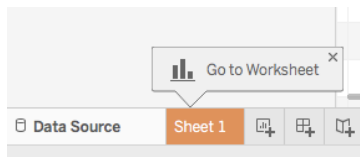Select the Venn diagram symbol between the two sources.
Join the sources: QuestionID = QuestionID

Hide Columns: Resp ID (Demographics), RespID (Extract 1), Pivot Field Names (Extract 1), Question ID (Question Helper)
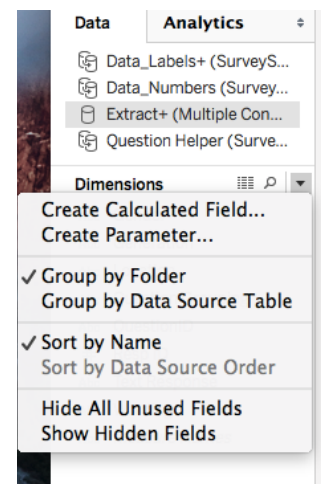
Rename Column "Pivot Field Values" to "Number Response"

**Click on Sheet 1 to start exploring.**

Select the dropdown menu next to the Dimensions pane.
Select Group by Folder

Visualizing Yes/No/Maybe Data

We'll create a visualization that visualizes respondents' answers to the "Will you vote in the upcoming election?" question. We will examine the data by the generation of respondents. This visualization is a bar chart that shows percentages of various categories.
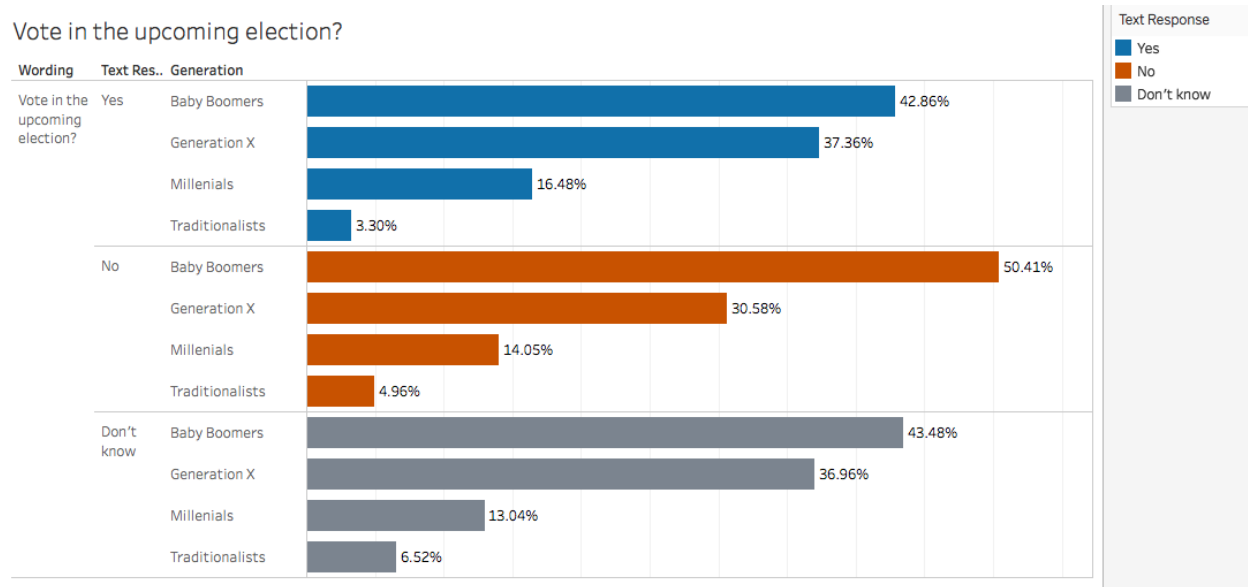
I. Create a Filter to include ONLY the voting question.

Drag Wording to filters. Click on Vote in the upcoming election? Click OK
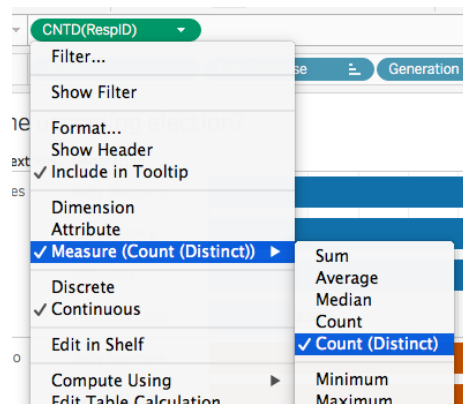
II. Create a Bar Chart Showing Responses by Generation
Drag Wording to Rows

Drag Text Response to Rows

Drag RespID to Columns

Click on RespID. Select Measure… choose Count (distinct)

Click on RespID. From dropdown, select Quick Table Calculation… select **Percent of Total**

Drag Generation to Rows

Click on RespID again. From dropdown, select Compute by… choose **Pane (down)**
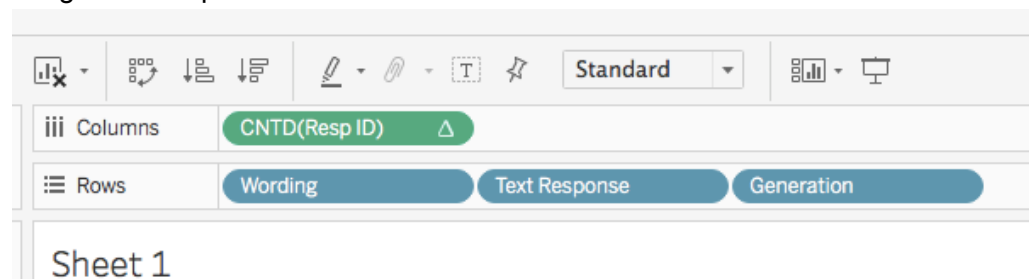
Drag RespID from Columns to Measures data pane to create a calculated field to use later.

Drag Text Response to Color button on the Marks Card
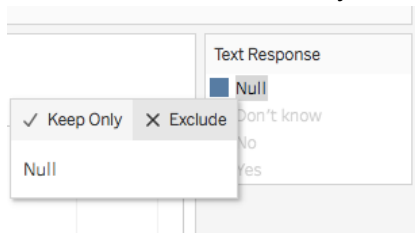*From the pop-up warning, select 'Add all members'
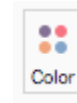
Drag Text Response from Dimensions to Rows

Drag RespID Calculated Field on the to Label button on the Marks card.

Exclude the Null values by filtering Text Responses on the right.

Visualizing Likert Scale Data
Click the icon to add a new sheet

I. Create Filter that excludes all non-Likert questions

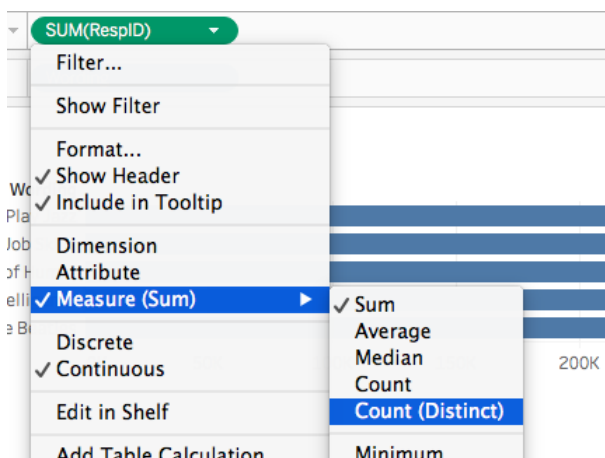Drag Question Grouping to Filter

Edit Filter

Select "Indicate degree to which you agree" - this will filter out all non-likert scale questions

II. Create a Bar Chart

Drag Wording to Rows

Drag RespID to Columns

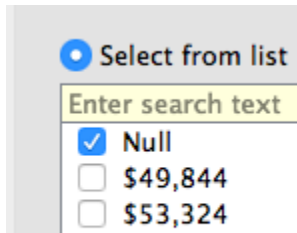Click RespID dropdown menu. Change from Measure (Sum) to Count (Distinct)

From the Same dropdown menu, select "Quick Table Calculation". Select "Percent of Total"

Drag Text Response to Color

III. Remove Null Values

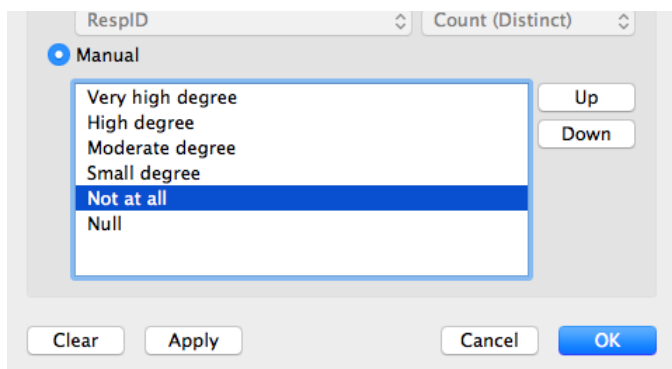Click the blue Text Response pill in the Marks Card. Select Edit Filter.

Unselect Null from the list to exclude the Null values

IV. Manually Re-Sort the Values of the Legend

Click on the dropdown arrow at the top right of the legend. Select Sort...
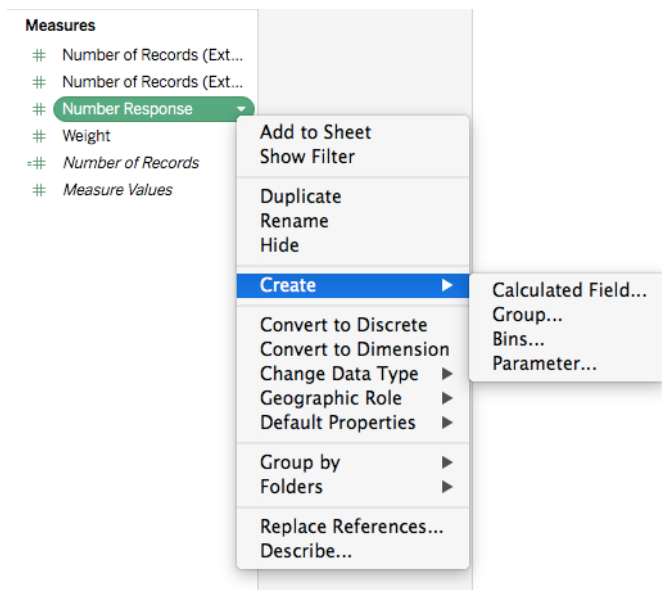
Select Manual. Re-order the values using Up and Down buttons.

V. Create a calculated field of average numeric responses for each question

Click the Number Response variable under Measures

Using the dropdown for this variable, select Create Calculated Field...

Name this field "Likert Avg"

Type the following formula:

AVG([Number Response]). Save it
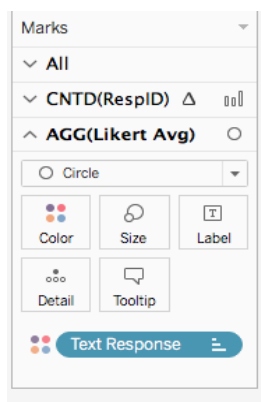
VI. Add averages to the chart as circles

Remove Text Response from the Marks Card (Click dropdown and select "Remove")

Drag your calculated field, "Likert Avg" to the Columns shelf

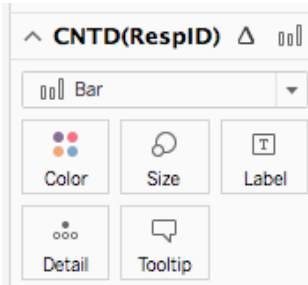Click on AGG(Likert Avg) in Marks card to make it active.

Remove Text Response field.
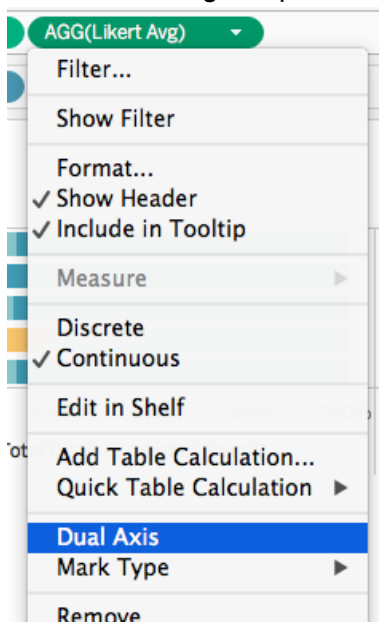
Select "Circle" from dropdown menu

Click on CNTD(RespID) in Marks Card. It will pop up when it's active.

Select the Bar option from the dropdown menu.

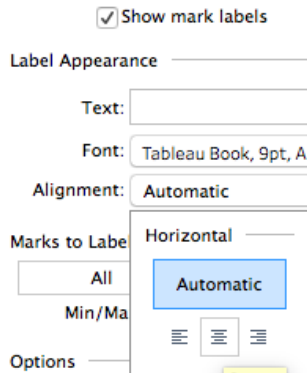**VII. Create a Dual Axis so average bubbles are on top of bars**

Click "Likert Avg" dropdown menu in the Columns shelf. Select "Dual Axis"

VIII. Style the chart

Adjust size so that the circles are large and gray.

Add Label by clicking Label button and checking the "Show Mark Labels" box
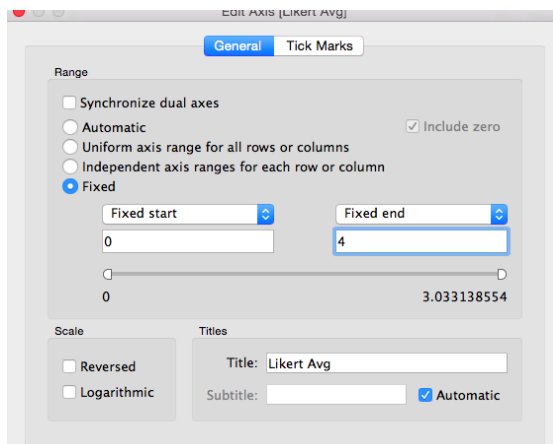Under Alignment, select the Center alignment icon under Horizontal

Adjust top axis range to the Fixed range of 0 to 4

Right click on top axis. Select Edit Axis...

Select Fixed End

Type 4 into the window under Fixed End. Click OK.

Re-order the bars by clicking the ordering icon:

Hide the top axis for cleaner appearance. Edit Axis… Show Header (clicking this will un-check it)

IX. Change the number of decimal places of the averages
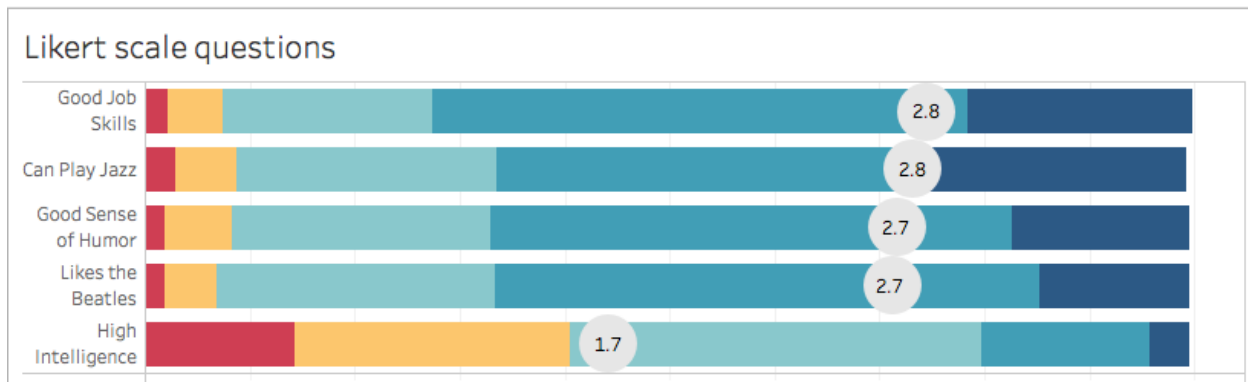
From top menu, select Analysis
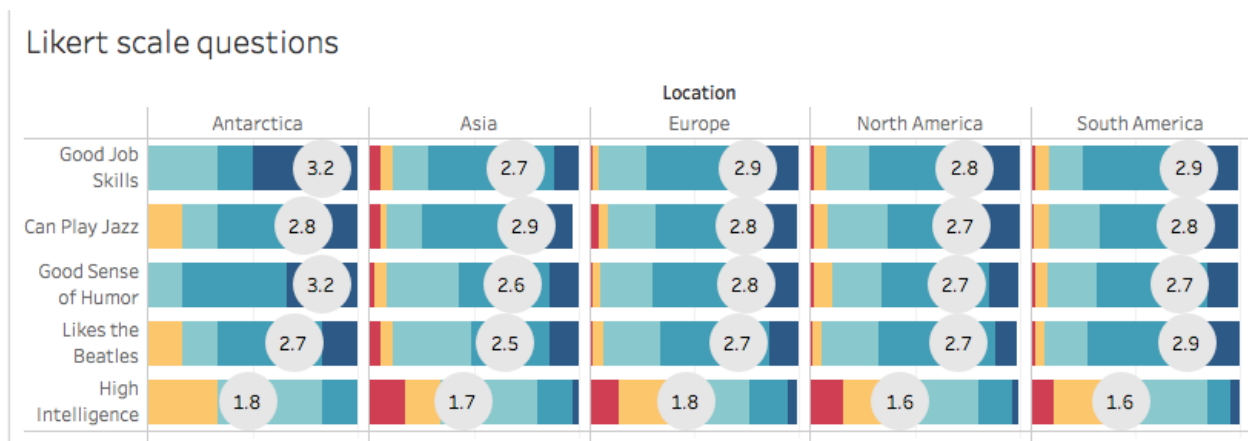Select Table Layout…
Select Advanced
Under Default Number Format, select Manual
Change number of Decimal places to 1

The numbers should now only have one decimal place:

Likert scale questions

Good Job Skills	2.8
Can Play Jazz	2.8
Good Sense of Humor	2.7
Likes the Beatles	2.7
High Intelligence	1.7

To examine the scales by Location, drag Location to the Columns shelf.

Likert scale questions

Location

	Antarctica	Asia	Europe	North America	South America
Good Job Skills	3.2	2.7	2.9	2.8	2.9
Can Play Jazz	2.8	2.9	2.8	2.7	2.8
Good Sense of Humor	3.2	2.6	2.8	2.7	2.7
Likes the Beatles	2.7	2.5	2.7	2.7	2.9
High Intelligence	1.8	1.7	1.8	1.6	1.6

You're done! You can save the workbook as a .twbx file for sharing purposes!